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Remarks

This application has been reviewed in light of the Office Action of September 8, 2005. Claims 1-15 and 17-21 are pending, and all claims are rejected. In response, claims 1, 4, 10, and 21 are amended, and the following remarks are submitted. Reconsideration of this application, as amended, is requested.

Claim 21 is rejected under 35 USC 112 and has been amended responsively. Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 1, 3, 5, 8-9, and 18-19 are rejected under 35 USC 102 as anticipated by Schwanz US Patent 4,227,426. Applicant traverses this ground of rejection.

The following principle of law applies to sec. 102 rejections. MPEP 2131 provides: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ... claim. The elements must be arranged as required by the claim..." [citations omitted] This is in accord with the decisions of the courts. Anticipation under section 102 requires 'the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim.' Carella v. Starlight Archery, 231 USPQ 644, 646 (Fed. Cir., 1986), quoting Panduit Corporation v. Dennison Manufacturing Corp., 227 USPQ 337, 350 (Fed. Cir., 1985)

Thus, identifying a single element of the claim which is not disclosed in the reference is sufficient to overcome a Sec. 102 rejection.

Schwanz discloses a device wherein a motor 5 has a mechanism in which a spring clip 7 (having arms 8 and 9) is placed over and engaged to the hollow output shaft 6 of the motor 5. The spring clip 7 engages a helical coil 3 of wire (wound onto

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a flexible wire 2) that extends through the center of the hollow output shaft 6. As the hollow output shaft 6 turns, "...the arm 8 projecting into engagement with the coils 3 pushes or pulls the wire 1 through the hollow shaft 6, depending upon the direction of rotation of the motor 5." (col. 2, lines 34-36).

This mechanism of Schwanz is not a leadscrew, but instead is a device for pushing or pulling the drive wire 1 along its length. See also the Abstract and claim 1 of Schwanz, both of which recite "A device for driving a flexible wire having a helical coil therearound along its length..." Stated in another way, the wire coil 3 and drive wire 1 do not rotate relative to the longitudinal axis of the wire 1, which would be the result if the drive wire 1 were acting as a leadscrew.

Although claim 1 recites a "leadscrew" and is thereby distinct from the structure of Schwanz, Applicant has amended claim 1 to further emphasize the distinction.

Amended claim 1 recites:

"a leadscrew operable to rotate about a rotational axis to linearly drive a driven structure and comprising...; and
a hollow drive nut housing affixed to the driven structure..."

Schwanz does not disclose this structure for two reasons. First, the drive wire 1 and the wire coil 3 do not "rotate about a rotational axis" as recited in claim 1. Schwanz states at col. 2, lines 37-38, "In order to assure that the wire 1 is actually displaced longitudinally, and not simply rotated..." and goes on to describe the required structure to be certain that the drive wire 1 does not rotate. Second, the explanation of the rejection analogizes the recited "hollow drive nut housing" to the shaft 6 of Schwanz. The shaft 6 of Schwanz is not "affixed to the driven structure" as recited in the present amended claim 1. The shaft 6 of Schwanz is longitudinally stationary (although it does rotate), and cannot be analogized to a driven structure.

The remaining rejected claims depend from claim 1 and incorporate its limitations. Schwanz cannot anticipate these claims for the reasons stated, and for other reasons associated with the specific details of the dependent claims.

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Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 6 and 7 are rejected under 35 USC 103 over Schwanz. Applicant traverses this ground of rejection.

Schwanz is nonanalogous art. Stated alternatively, Schwanz is not within the scope and content of the prior art that may be used in forming a sec. 103 rejection. To be analogous art and properly used in forming a sec. 103 rejection, a reference must be concerned with the same problem as another reference and the claims which are being addressed. See, for example, Medtronic, Inc. v. Cardiac Pacemaker, Inc., 220 USPQ 97, 104 (Fed. Cir. 1983), stating: "Faced with a rate-limiting problem, one of ordinary skill in the art would look to the solutions of others faced with rate-limiting problems."

In the present case, the inventor was concerned with a problem in improving the performance of leadscrew assemblies. The first sentence in the Summary of the Invention begins: "The present invention provides a leadscrew assembly..." Every pending claim recites a "leadscrew assembly". In a leadscrew assembly, the leadscrew is rotationally driven. Consistent with the common usage in the art and as stated in para. [0010] of the present application, "The assembly typically further includes a motor that rotationally drives the leadscrew...". See also the present claim 9. Although the explanation of the rejection of the sec. 102 rejection initially asserts that "Schwanz...discloses a leadscrew assembly...", that is not the case. Schwanz does not disclose or teach a leadscrew assembly, wherein the leadscrew is rotationally driven. In fact, Schwanz emphasizes that its drive wire 1 is not rotated. Schwanz states at col. 2, lines 37-38, "In order to assure that the wire 1 is actually displaced longitudinally, and not simply rotated..." and goes on to describe the structure that assures that the wire 1 is not rotated. It is therefore not properly applied in rejecting the present claims.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F2d 981, 180

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USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the single applied prior art reference clearly does not arguably teach some limitations of the claims.

Claims 6 and 7 incorporate the limitations of claim 1, which are not taught by Schwanz for the reasons discussed in the response to the sec. 102 rejection, and which are incorporated here. Accordingly, Schwanz cannot teach the limitations of claims 6 and 7.

The explanation of the rejection states "Since it has not been disclosed why such a feature [i.e., the arced spring pin] is mechanically pertinent, it is considered to be a matter of obvious design choice..." Applicant agrees that Schwanz does not disclose the limitation "the central portion of the spring pin spanning in an arc across an interior of the nut bore to engage the leadscrew thread". Because Schwanz does not disclose the claim limitation, there is no basis for asserting the rejection according to the principle of law set forth in the second preceding paragraph.

The explanation of the rejection seeks to rely on "matter of obvious design choice". The concept of "matter of obvious design choice" is not intended to substitute for statutory prior art. It provides a means by which one of several realistic alternatives presented by statutory prior art may be selected, absent surprising or unexpected advantages. It is to be used only where the applied statutory prior art sets forth a list of realistic alternative selections, and it would be a matter of design choice to select one member from the list. In this case, the prior art of record presents no such design choice. Specifically, Schwanz does not teach that the spring clip 7 may be arced, as recited in the present claims. Accordingly the application of "matter of obvious design choice" is not appropriate here. This amounts to a "well known in the art" type of rejection. Applicant traverses this approach, and asks for the citation and

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application of proper statutory prior art or other evidence supporting the rejections, MPEP 2144.03. If the rejection is maintained, Applicant asks that the Examiner cite and apply statutory prior art, pursuant to MPEP 2144.03.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Claims 2 and 4 are rejected under 35 USC 103 over Schwanz in view of Devenyi US Patent 5,636,549. Applicant traverses this ground of rejection.

Schwanz is not properly applied because it is not analogous art, see the prior discussion on this point which is incorporated here.

The teachings of Schwanz and Devenyi '549 are not properly combined for two reasons. First, MPEP 2143.01 provides that, in constructing a sec. 103 rejection, the proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. MPEP 2143.02 requires that, in combining the teachings of two references, there must be a reasonable expectation of success in the combination. Both of these mandates would be violated in the proposed approach of combining the teachings of Schwanz and Devenyi '549. Devenyi deals with a leadscrew assembly, wherein the leadscrew is rotationally driven. Schwanz does not deal with a leadscrew assembly, and in Schwanz the drive wire 1 is not rotationally driven. Schwanz states at col. 2, lines 37-38, "In order to assure that the wire 1 is actually displaced longitudinally, and not simply rotated..." and goes on to describe the structure that assures that the wire 1 is not rotated. The structures of Schwanz and Devenyi '549 are mechanically incompatible. The attempt to modify the approach of Schwanz with that of Devenyi, as suggested in the explanation of the rejection, would render the approach of Schwanz inoperable, would change the principle of operation, and would not be expected to be operable in the manner discussed by Schwanz.

Second, the present rejection is a sec. 103 combination rejection. It is well established that a proper sec. 103 combination rejection requires more than just finding teachings in the references of the elements recited in the claim (but which was not done here). To reach a proper teaching of an article or process through a combination of

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references, there must be stated an objective motivation to combine the teachings of the references, not a hindsight rationalization in light of the disclosure of the specification being examined. MPEP 2143 and 2143.01. See also, for example, In re Fine, 5 USPQ2d 1596, 1598 (at headnote 1) (Fed.Cir. 1988), In re Laskowski, 10 USPQ2d 1397, 1398 (Fed.Cir. 1989), W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 311-313 (Fed. Cir., 1983), and Ex parte Levengood, 28 USPQ2d 1300 (Board of Appeals and Interferences, 1993); Ex parte Chicago Rawhide Manufacturing Co., 223 USPQ 351 (Board of Appeals 1984). As stated in In re Fine at 5 USPQ2d 1598:

"The PTO has the burden under section 103 to establish a prima facie case of obviousness. [citation omitted] It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references."

And, at 5 USPQ2d 1600:

"One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."

Following this authority, the MPEP states that the examiner must provide such an objective basis for combining the teachings of the applied prior art. In constructing such rejections, MPEP 2143.01 provides specific instructions as to what must be shown in order to extract specific teachings from the individual references:

"Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention when there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d

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1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992)."

* * * * *

"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)."

* * * * *

"A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art at the time the claimed invention was made' because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd.Pat.App.& Inter. 1993)."

Here, there is set forth no objective basis for combining the teachings of the references in the manner used by this rejection, and selecting the helpful portions from each reference while ignoring the unhelpful portions. An objective basis is one set forth in the art or which can be established by a declaration, not one that can be developed in light of the present disclosure. If the rejection is maintained, Applicant asks that the Examiner set forth the objective basis found in the references themselves for combining the teachings of the references, and for adopting only the helpful teachings of each reference and disregarding the unhelpful teachings of the reference. Applicant cannot find any such objective basis, because of the completely different types of mechanisms taught by the two references.

Even if the teachings of the two references are combined, the resulting structure, to the extent that it can be understood, does not teach the presently claimed approach.

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The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the applied prior art references clearly do not arguably teach some limitations of the claims.

Schwanz teaches that the spring clip 7 is used in conjunction with the motor end of its linear (non leadscrew) drive. Devenyi '549 teaches the use of a rolling-contact follower structure such as that shown in Figure 4 of Devenyi '549. Neither of the references teaches:

"a hollow drive nut housing affixed to the driven structure and comprising

a nut bore having an unthreaded inner surface with the leadscrew being inserted through the nut bore, the nut bore being sized such that the leadscrew may rotate therein about the rotational axis, and

a spring pin affixed to the drive nut housing and spanning across the nut bore to engage the leadscrew thread."

as recited in claim 1, which is incorporated into claims 2 and 4.

Further, claim 4 recites in part: "the thread wire has a circular cross section". Figure 3 of Schwanz clearly shows that the helical coil 3, which is analogized in the rejection to the thread wire of claim 4, is non circular in cross section. There is no reason, other than an attempted hindsight reconstruction of the present invention, for substituting the wire of Devenyi '549 into the contrary teaching of Schwanz.

Applicant asks that the Examiner reconsider and withdraw this rejection.

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Claims 9-15, 17, and 20-21 are rejected under 35 USC 103 over Pan US Patent 6,459,844 in view of Schwanz and Devenyi '549. Applicant traverses this ground of rejection.

Schwanz is not properly applied because it is not analogous art, see the prior discussion on this point which is incorporated here.

The teachings of Schwanz, Pan, and Devenyi '549 are not properly combined for two reasons. First, MPEP 2143.01 provides that, in constructing a sec. 103 rejection, the proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. MPEP 2143.02 requires that, in combining the teachings of two references, there must be a reasonable expectation of success in the combination. Both of these mandates would be violated in the proposed approach of combining the teachings of Schwanz, Pan and Devenyi '549. Devenyi and Pan deal with a leadscrew assembly, wherein the leadscrew is rotationally driven. Schwanz does not deal with a leadscrew assembly, and in Schwanz the drive wire 1 is expressly not rotationally driven. Schwanz states at col. 2, lines 37-38, "In order to assure that the wire 1 is actually displaced longitudinally, and not simply rotated..." and goes on to describe the structure that assures that the wire 1 is not rotated. The structures of Schwanz, on the one hand, and Pan and Devenyi '549, on the other, are mechanically incompatible. The attempt to modify the approach of Pan with that of Schwanz, as suggested in the explanation of the rejection, would render the approach of Pan inoperable, would change the principle of operation, and would not be expected to be operable in the manner discussed by Schwanz.

Second, the present rejection is a sec. 103 combination rejection. To reach a proper teaching of an article or process through a combination of references, there must be stated an objective motivation to combine the teachings of the references, not a hindsight rationalization in light of the disclosure of the specification being examined. Applicant incorporates the prior discussion of this legal principle.

Here, there is set forth no objective basis for combining the teachings of the references in the manner used by this rejection, and selecting the helpful portions from each reference while ignoring the unhelpful portions. An objective basis is one set forth

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in the art or which can be established by a declaration, not one that can be developed in light of the present disclosure. If the rejection is maintained, Applicant asks that the Examiner set forth the objective basis found in the references themselves for combining the teachings of the references, and for adopting only the helpful teachings of each reference and disregarding the unhelpful teachings of the reference.

The explanation of the rejection (Office Action, page 6, lines 10-14) asserts that it would be obvious to combine the teachings of Pan and Schwanz "so as to have a relatively inexpensive arrangement for transferring forces between the nut and screw shaft..." In fact, Schwanz's approach transfers forces between the motor and the non-rotating drive wire 1, not between a drive nut housing and a screw as in a leadscrew assembly. Further, there is no reason to change Pan's approach, inasmuch as neither reference suggests that costs could be reduced by making the proposed modification.

Even if the teachings of the three references are combined, they resulting structure, to the extent that it can be understood, does not teach the presently claimed approach.

Claims 10-11 depend from claim 1. The limitations of claim 1 are not taught by the combination of these references for the reasons stated earlier, and which are incorporated here. Pan teaches a conventional threaded leadscrew assembly. The proposed introduction of Schwanz's approach into Pan does not modify the leadscrew follower, only the motor end.

The explanation of the rejection (Office Action, page 6, lines 10-14) asserts that it would be obvious to combine the teachings of Pan and Schwanz "so as to have a relatively inexpensive arrangement for transferring forces between the nut and screw shaft..." Schwanz's approach transfers forces between the motor and the non-rotating wire, not between a screw and a drive nut housing as in a leadscrew assembly. Even if the teachings of the two references are combined, they do not result in the claimed structure.

Claim 10 recites in part:

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"a linear slide mechanism to which the drive nut housing is affixed so that the drive nut housing does not rotate".

Schwanz places its structure at the motor end, for transferring forces to the non-rotating drive wire 1, not at a remote end where a linear slide is moved by a rotating leadscrew.

Independent claim 12 recites in part:

"a hollow drive nut housing comprising
a nut bore..., and
a spring pin affixed to the drive nut housing and spanning
across the nut bore to engage the leadscrew thread...,
a linear slide mechanism to which the drive nut housing is affixed
so that the drive nut housing does not rotate."

Independent claim 20 has a similar recitation.

Schwanz teaches that the structure analogized to the drive nut housing, the hollow shaft 6, is affixed to the motor, not to any linear slide mechanism (col. 2, lines 8-9). Thus, none of the three applied references teaches a leadscrew assembly having a drive nut housing with a spring pin, wherein the drive nut housing is affixed to the linear slide mechanism. In addition to the fact that Schwanz does not teach a leadscrew, Schwanz places the structure relied upon in forming the rejection at the motor end, not at any linear slide mechanism end (and in fact Schwanz has no linear slide mechanism). The structure of the proposed combination of teachings seeks to move the mechanism of Schwanz to a location completely different from that taught by Schwanz, and to apply it in a completely different context from that taught by Schwanz, a rotating leadscrew.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

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Applicant submits that the application is in condition for allowance, and requests such allowance.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "William Schubert", written over a horizontal line.

William Schubert

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Attorney for Applicant